

World Air Quality

project overview

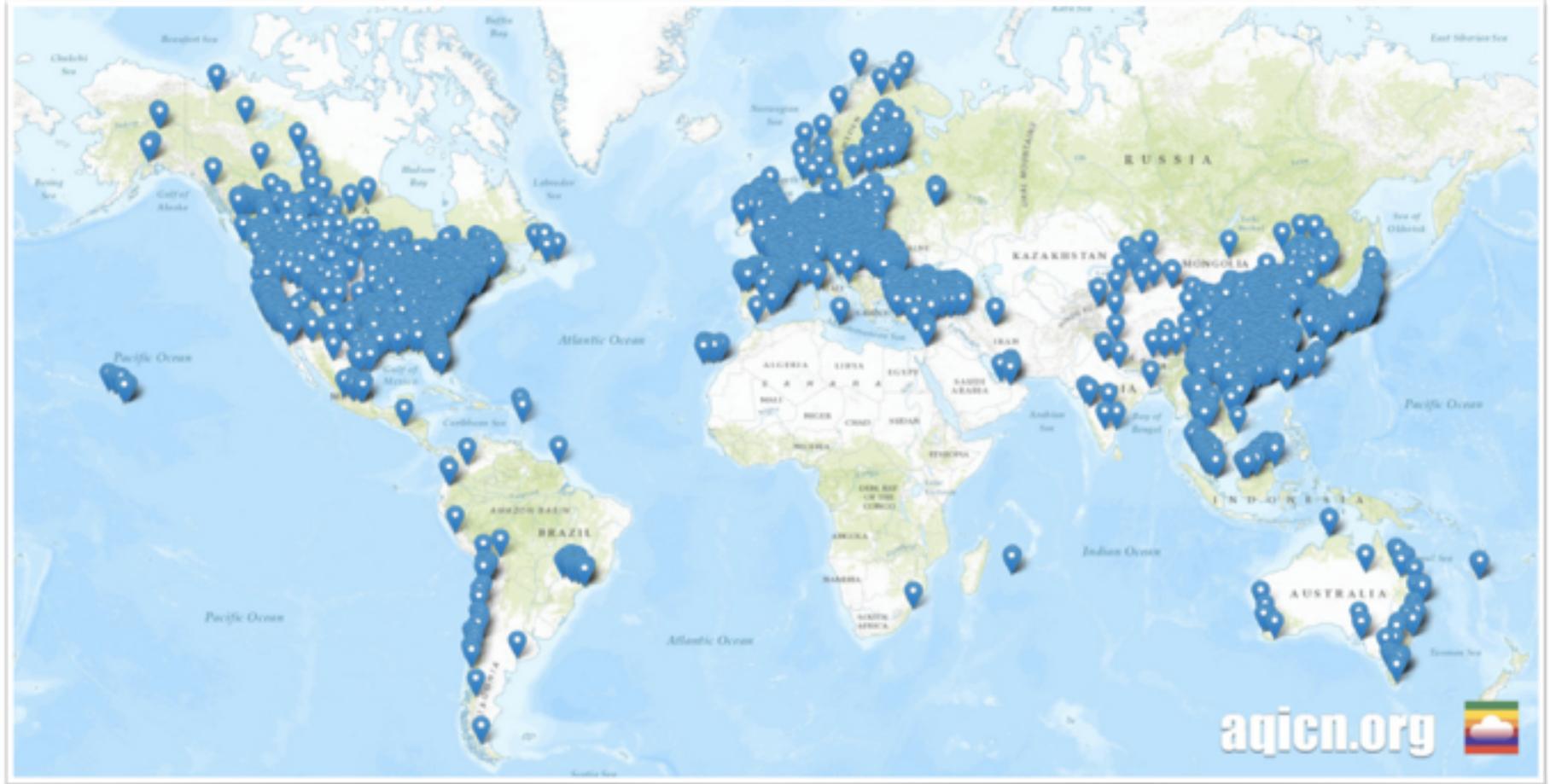


waqi.info
aqicn.org

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PM2.5 Ground Monitoring Stations in 2015:

Most of the countries in our world are measuring air quality



Project Philosophy: Why, What & How



- 1 Why: Promote** free information about Air Pollution in order to increase Air Quality **awareness** to the “normal” citizens (non-scientist).
- 2 What: Unify** the world Environmental Agencies (EPA) monitoring data, into a **global** and normalized real-time air quality information.
- 3 How: Partner** with local authorities, EPA, and organizations for monitoring new cities and countries, and develop local forecasting models.



There more than 16,000 known monitoring stations, from 60 countries, delivering near real-time hourly readings, out of which almost 8,000 are providing PM2.5/PM10 data.



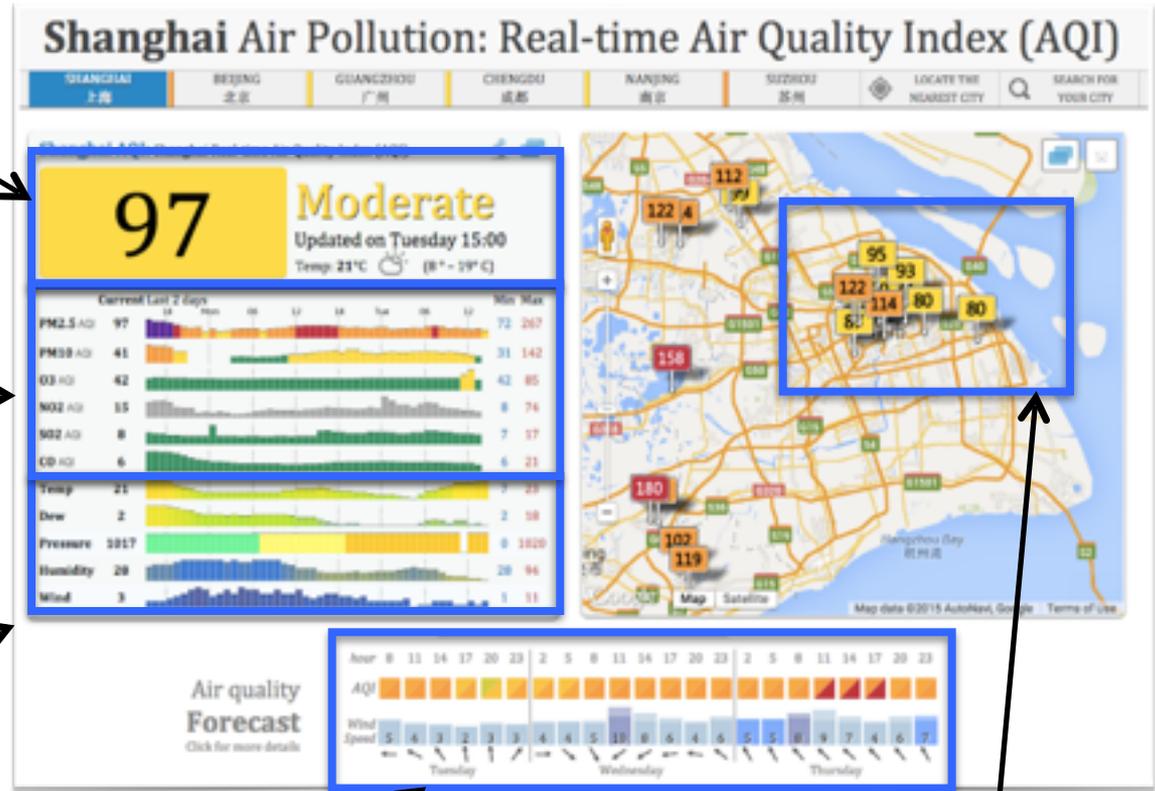
Air Quality Data Visualization

<http://aqicn.org/city/shanghai/>

Current Air Quality Index
(Using the USEPA Instant-Cast Scale)

Individual AQI for the main Pollutants for the last 2 days
(Pols: PM2.5, PM10, O3, NO2, SO2, CO)

Past 2 days Weather conditions



Forecast:
AQI (top) and
Wind (bottom)

Nearest
Stations

Unifying Global Air Quality Data

Data is gathered, in real-time, from over 60 countries, 300 feeds and 16000 stations. Only official data from EPA/EPBs is used (i.e. no data for DIY/amateur stations is collected).

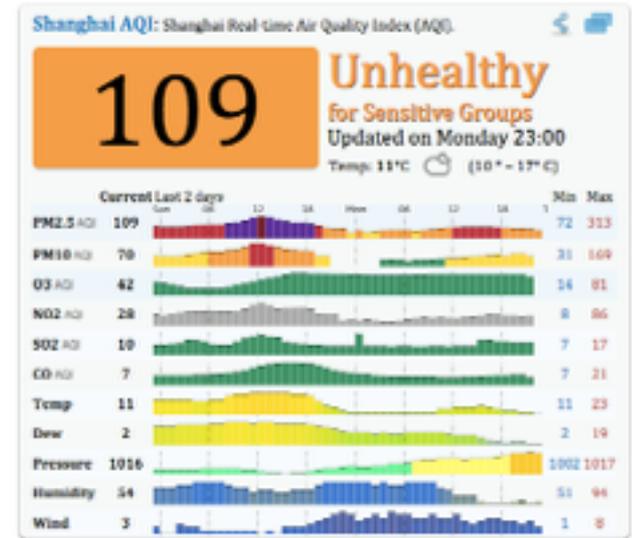
For each station, there can one or several pollutants monitored:

- PM1, PM2.5, PM10, Ozone, Nitrogen Dioxide (NO2), Sulphur Dioxide (SO2), Carbon Monoxide (CO)
- Benzen, Methan, Toluene, Formaldehyde, THC, MNHC, Naphthalene, Phenol, Ethylbenzen, Hydrogen sulfide...

Only half of the 16000 stations are published on the map. The reason is that only stations with particulate matter readings (PM2.5/PM10) are published.

For the up-to-date data, check:

- aqicn.org/sources/
- aqicn.org/faq/



Air Quality Standards



Almost each country or continent has its own Air Quality Index standard, to convert the mass concentrations in mg/m³ into an AQ Index:

- PSI: Pollutant Standards Index (SG)
- API: Air Pollution Index (MY)
- ICA: Índice de la Calidad del Aire (CO)
- IMECA: Índice Metro.. CAI (MX)
- AQHI: Air Quality Health Index (HK,CA)
- CAI: Comprehensive Air Quality (KR)
- CAQI: Common Air Quality Index (EU)

The AQI scale in use on aqicn is the USEPA standard, but we are working on an option allow users to select the scale that best fits their needs.

AQI Category, Pollutants and Health Breakpoints						
AQI Category (Range)	PM ₁₀ 24-hr	PM _{2.5} 24-hr	NO ₂ 24-hr	O ₃ 8-hr	CO 8-hr (mg/m ³)	SO ₂ 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+

Extract of India National Air Quality Index (AQI)

The Air Quality Standard are, for most of them, based on 24-hours exposure at a specific level.

However, due to the highly dynamic nature of Air Pollution, and especially Particulate Matter pollution (PM_{2.5}) in case of strong wind, daily averaging does not give sufficiently good enough information to the citizens. For this reason, the “Instant Cast” reporting is used on aqicn - see <http://aqicn.org/faq/2015-03-15/air-quality-nowcast-a-beginners-guide/>

Real-time World Air Quality PM2.5 Map

<http://aqicn.org/map/world/> or <http://waqi.info>



Quality Insurance for Air Quality Data



1 Official Air Quality Data

In order to ensure that the data provided to the user is always correct, data published on aqicn.org only comes from official government sources. We do not publish DIY monitoring stations. see aqicn.org/sources/

2 Individual Sources Tracking

Data from each individual sources is stored as unique values, on which processing is applied to combine all sources together. This way, each published AQI value data source origin can always be tracked back, in case there would be difference between sources for one station. see aqicn.org/faq/

3 Data and Sensor Research

We are continuously researching on new air monitoring solutions, sensors, and data analysis and processing solutions to improve Air Quality data. All our experimentations are available online at aqicn.org/research/



Project Team & Fundings



The World Air Quality Index project was started in 2007, and can nowadays be referred as a social enterprise project.

Its core team is located in Beijing, China and composed of several contributors in the domain Environmental Science, Data Visualization, Marketing, System Engineering and Product Design.

The project has so far not received any kind of fundings from any government, institute or private company.

For more information, check aqicn.org/contact/



aqicn.org: air quality information as transparent as the air you would like to breath

